

# JOSEPH A. BOYLE

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## EDUCATION

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Rutgers University New Brunswick  
*B.S., Computer Science (3.52 GPA)*

New Brunswick, NJ  
September 2015 - Present

## ACADEMIC RESEARCH

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**Visual MIMO:** Calibrationless visible-light communication system using Android phones

- Integrated color-embedded message decoding and efficiency improvements into system's algorithms
- Designed and built an automated testing bench to analyze message transmission accuracy, and evaluated differential metamer generation accuracy at volume extremas.
- Presented at Computer Vision and Pattern Recognition 2016 conference.

## WORK EXPERIENCE

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Learning Assistant (Computer Science)  
Rutgers University, Rutgers Learning Centers

*Piscataway, New Jersey*  
*August 2016 - Present*

- Facilitate a 55-minute recitation and a 80-minute study group.
- Actively encourage deeper understandings of concepts and their motivations.
- Prepare study materials for students.

Programmer  
Rutgers University, School of Arts and Science IT

*Piscataway, New Jersey*  
*September 2015 - June 2016*

- Developed a series of course searching modules and a staff directory module on Joomla!.
- Automated the transfer of data from old systems to the Joomla! CMS.

Line Cook  
Kitchen 519

*Glendora, New Jersey*  
*July 2014 - August 2015*

- Began as a dishwasher and worked through pantry, fryer, grill, and saute stations.

## INDEPENDENT PROJECTS

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**Char:** An 8-bit architecture with its own instruction set, CPU design, and simulator written in C.

**Indigo:** An Assembly-like language with a compiler written in C, run on the Char architecture.

**VoxelGen:** A procedurally generated Minecraft clone written in C++, using OpenGL for graphics.

**Chemify:** An Android application which solves various chemistry problems such as predicting chemical reactions, dimensional analysis, and chemical nomenclature.

**Enigma Machine:** A horror game written in Java and LWJGL.

**RestaurantStock:** A web-based restaurant inventory management system written in PHP.

## RELEVANT COURSES

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Computer Architecture, Databases, Data Structures, Discrete Structures,  
Independent Study in Computer Vision, Principles of Programming Languages

## SKILLS

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Android, C, C++, Git, Java, Linux, MATLAB, OpenGL, PHP, SQL